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The Virginia Wetlands Report

Winter 1996
Vol. 11, No. 1



Northern Neck Workshops Prove Profitable to Participants

by Beth Peacock

How do you manage the tricky dilemma of balancing wetlands protection with development pressures?

Waterfront landowner's goals and decisions are the keystones to protection. Wetlands protection laws provide some control over decisions that can be made. Another factor is the wetlands board whose members interpret the regulations. Citizen interest in and reaction to local issues plays an additional part in the process.

To protect wetlands, it is crucial for all concerned to appreciate and understand the value that wetlands have to us—their necessity to the fishing, crabbing and oyster industry; that supports much of Eastern Virginia; their support of the profuse wildlife that we, who live near the Bay, take for granted, and their role in controlling erosion on individuals' waterfront property.

A knowledge of the law is necessary to make wise decisions. Appreciation of what the law is designed to achieve is essential in order for those involved to take wetlands protection seriously.

After attending numerous wetlands board meetings in the Northern Neck and visiting many waterfront development sites, Northern Neck Planning District Commission Wetlands Engineer Josie Wold decided it would be helpful to arrange a series of infor-

mative workshops. Her goal was to make them fun and relevant to voiced needs of board members and citizens.

Wold had attended several VIMS seminars at Gloucester Point, an hour and a half away from the Northern Neck, and wanted to "bring what they were doing in their big auditorium right to local sites." She felt this would be a way to make the expertise offered by the VIMS Wetlands Program staff easily accessible locally, in a way that would fit in with the working person's schedule and be relevant county by county.

During the summer months, Wold conducted one, late-afternoon workshop in each of the four Northern Neck counties. Each was held in a different environment and offered different but overlapping areas of discussion and demonstration so that participants could

attend all four workshops and learn something new each time. Plus, the most essential information was covered repeatedly for the benefit of those who only attended one workshop.

The first workshop attracted 17 participants, mostly wetlands board members and local marine construction designers and contractors. The second workshop brought out more interested citizens including a family with two teenaged children.

The third workshop held at Smith Point at the mouth of the Great Wicomico River had an enthusiastic response of 45 attendees, including representatives from three area newspapers. The final workshop held in Westmoreland county welcomed 33 participants, many of whom were interested property owners from the waterfront subdivision where it was held.

VIMS Wetland's Education Coordinator Bill Roberts enthusiastically offered his help when Wold mentioned the project to him and presented a series of demonstrations and discussions on marine life diversity, wetlands plants and ecology at each workshop.

Northumberland County Wetlands Board member J.C. Curry noted that Roberts' graphic demonstration of siting



Kirk Havens of VIMS talks about wetlands and tidal dynamics.

Continued on page 2

Title here
continued from page 1

jurisdiction areas from mean low water was a moment that made clear a procedure that he was “familiar with from descriptions in his wetlands text but never really envisioned until [he] saw it demonstrated.”

Curry, a five-year veteran board member who knows his manual through and through, was surprised to see “what a large area can be covered in the

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In this Issue:

Northern Neck Workshops

Prove Profitable to Participants 1

Black Skimmer 3

Alewife 3

Geographic Data Exchange-

The State of the Problem 4

Grazing and Haying

Activities in Wetlands 5

It's Management Symposium Time ... 6

Wondering About Wetlands 6

15th Annual Virginia Wetlands

Management Symposium Agenda 7

Calendar of Upcoming Events 8

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board's jurisdiction” and felt that this was one of the most important things he learned from the workshop.

Other speakers at the workshops included Adrian Jennings with the Corp of Engineers; Chip Niekirk, VMRC Environmental Engineer; Bill Duncanson, Richmond County Land Use Administrator; Kirk Havens, VIMS Marine Scientist; Jay Woodward and Jeff Madden, VMRC Environmental Engineers.

Additional speakers were Kenny Eades, Northumberland County Assistant County Administrator; Steve Gunnells, Westmoreland County Land Use Administrator; Teresa Tabulenas, Belle Isle Park Interpreter and Nancy Ibsen, Shoreline Advisory Service Engineer. Having speakers from the various counties helped participants to “feel grounded,” and provided an opportunity for them to get to know local officials and resource persons.

The Richmond County workshop was held on a private waterfront estate. Participants were able to examine a large rip rap project and saw a demonstration of the method of determining wetlands jurisdiction. Workshops also included information on ecology and wetlands plant identification.

Attendees at the Belle Isle workshop in Lancaster County studied a badly eroded point of land and discussed the pros and cons of several shoreline stabilization methods. The group also observed a large non-tidal wetlands and learned the history of the marsh—how it had been utilized by Indians and settlers.

Diversity of plant and animal life in wetlands was emphasized at the Northumberland County workshop. A seine net dragged through the shallow marsh brought out not only the expected shrimp, tiny crabs, jellyfish, baby spot, perch and bass, but also an unusual butterfly fish—a visitor from the tropics.

The Westmoreland County workshop was held at Stratford Harbor subdivision. During a walk along the beach, wetlands protection was discussed along with concepts such as community piers. Marinas and other local land use issues were also topics.

Richmond County Wetlands Board member David Gallagher and his wife,

Vanella, a Planning Commission member, attended several workshops and agreed that the experience was very valuable. Vanella explained she had come foremost from “selfish motives”—to see how other people were handling similar shoreline erosion problems to the ones they were experiencing on their farmland.

David was particularly interested in the demonstration of the variety of marine life revealed by the seine net haul. “You can only learn so much from reading,” he remarked.

Good advance publicity, along with word of mouth, kept attendance high. Before each workshop Wold visited that county's local newspaper with a press release about the upcoming program and invited their reporter to attend.

All four newspapers responded with advance notice articles and with front page coverage of the workshop itself, complete with pictures. Wold also sent flyers a week ahead of time to Wetlands Board members in all four counties and posted flyers in county office buildings.

Wold visited each site ahead of time to identify and prepare a wetlands plant list which she gave to each participant, along with a map of the immediate area.

Each workshop ended with an informal, social period which enabled participants to continue discussions with each other and the speakers.

Austin Magill who recently retired from the National Marine Fisheries Service came to the Westmoreland County Workshop because it was being held in his neighborhood and he was interested in learning more about waterfront owners property rights. Now, a few months later, he has joined that county's Wetlands Board, noting the importance wetland areas have to “90 percent of marine species at some point in their lives.”

From the many positive comments she received about the workshops, Wold considers the project a success. She was pleasantly surprised to find so many people who simply wanted to learn more about their wetlands backyard.

Beth Peacock serves on the Richmond County Wetlands Board and is a reporter for The Westmoreland News.

Feathers & Fins

Black Skimmer

(*Rynchops niger*)

Julie G. Bradshaw

The black skimmer, although once thought to be closely related to terns and gulls, is a rather unique bird species, and is one of only three members of its family in the world (along with African and Indian skimmers). In the U.S., the black skimmer is found all along the Atlantic Coast south from Massachusetts, and all along the Gulf Coast. In the western U.S., a few pairs apparently nest in the San Diego and Salton Sea areas. In Virginia, black skimmers are generally found from mid-April to mid-November, primarily along the Atlantic Coast and lower Chesapeake Bay (although a 1984 Virginia Society of Ornithology Christmas count recorded 60 skimmers off Cape Henry).

The black skimmer is a strikingly beautiful bird, jet black above with a bright white forehead and underparts, bright red legs and feet, and a bill that is red with a black tip. Its bill is its most unique feature; skimmers are the only birds with a lower mandible longer than the upper mandible. The bill is laterally compressed to a thin blade. When the young skimmers hatch, their upper and lower bills are the same length. The lower bill doesn't start to grow longer until the bird is almost full-grown and ready to fly.

As their name suggests, skimmers feed by skimming the water with their lower bill. Because of the body's proximity to the water as it skims with its bill, the skimmer's wingbeat is shallow, and flight is quite graceful looking. When the lower bill hits a small fish or crustacean, the upper bill closes down on the prey, and the skimmer drags it from the water and swallows it whole without changing its pattern of flight. Skimmers feed mostly in early evening and at night when water surface tends to be calmest and prey is near the surface. During the day they roost in groups on sand bars and beaches, usually all standing with heads pointing in the same direction.

The black skimmer nests in colonies above high water on the upper beach. As with many beach nesters, its nests are simply scrapes in the sand. Because they are on relatively open ground, the skimmers' nests are susceptible to predation by animals such as foxes, raccoons, and gulls. Black skimmers often nest close to colonies of terns, where they may benefit from the tern's tendency to aggressively defend its

Alewife

(*Alosa pseudoharengus*)

Lyle Varnell

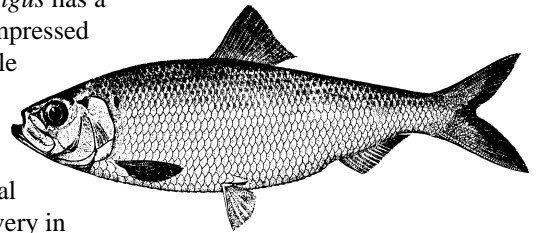
Once numerous in the Chesapeake Bay, the alewife population hovers near historical lows due to habitat loss and the effects of fishing. Until recently, this and other alosid species played a vital ecological role in the Bay. Young-of-year were once one of the dominant pelagic prey species in the upper estuarine nursery areas, while adults were prey for estuarine and nearshore oceanic piscivores. As their stocks have decreased, so has their role in the marine ecosystem.

Alewives are members of the family Clupeidae, which includes the herrings, menhaden and shads. *A.*

pseudoharengus has a strongly compressed body, a single dorsal fin and a deeply forked caudal

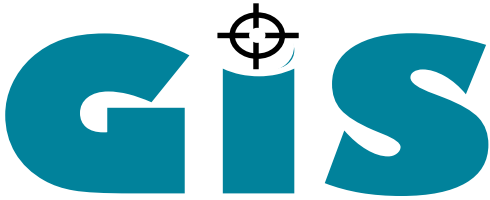
fin. It is silvery in color with a greenish back. Usually, one small dark spot is present on the shoulder. It grows to approximately 15 inches and may live up to 8 years. Because of their similar morphologies and life histories, *A. pseudoharengus* is commonly grouped with *Alosa aestivalis* (the blueback herring) into "river herrings." Alewives are distinguished from blueback herring by the color of the back (hence the common name origin of "blueback" herring). Also, the alewife is somewhat larger than its close relative. Alewives range from Newfoundland and the St. Lawrence River to South Carolina. Population centers are skewed to the northern portion of the range. In contrast, the blueback herring ranges from Nova Scotia to northern Florida, with a preference for the southern portion of the range. The two species co-occur in the Chesapeake Bay. Natural landlocked populations of alewives also occur along the east coast.

Adults generally inhabit the nearshore areas of the continental shelf, and also the lower areas of bays and estuaries, during the summer, fall and winter periods. They are an anadromous species, so they must migrate to freshwater to spawn. Adults commonly arrive in the Chesapeake Bay about March and make their way up the tributaries to shallow freshwater. Alewives generally move farther upstream than blueback herring unless obstructions such as dams and levees are present which would prevent further migration. Spawning occurs during late March through April in shallow sluggish water. Some of the fish spawn in brooks only a few feet wide and less than one foot deep. Eggs (up to 350,000 per female) sink and adhere to hard substrates such as stones and brush.



Continued on page 4

Continued on page 5



Geographic Data Exchange - The State of the Problem

Marcia R. Berman

In a 1983 report to the General Assembly it was suggested that Virginians had already invested millions of dollars in GIS system development, training, and data creation. This estimate is spread across state and local government agencies as well as private sector industry. For example, just over 75% of all localities had some investment in GIS at the time the report was prepared (Plangraphics, Inc., 1983)

As GIS use increases, some obvious trends will become apparent to newcomers. First, the initial investment into GIS is the most costly with the acquisition of hardware and software. Second, the development of digital data layers to build a GIS that will support program goals is labor intensive and therefore expensive. Finally, maintenance of existing databases is essential and resources are rarely set aside to support this. These trends translate into millions of dollars in revenues expended.

While these facts might be perceived as reasons not to make the jump toward digital geographic information management, it has been well established and widely recognized that the benefits far outweigh the costs. However, there are opportunities which could be pursued to significantly reduce future data development and maintenance costs. Specifically, the exchange of digital geographic data offers great promise in substantially reducing data development costs.

It is no surprise among long-standing GIS users that duplication of effort is responsible for widespread waste of valuable resources. The novice, on the other hand, might be shocked to learn that it is not unusual for two (2) separate agencies to work concurrently but independently to develop the same GIS coverage. There are a number of reasons responsible.

The next few articles to follow in this section of *The Virginia Wetlands*

Report will address the problems of data exchange, the obstacles that GIS users face to improve information transfer between agencies, and offer several approaches which might ameliorate the current situation. Readers who have an interest in contributing to this future discussion are encouraged to write or call the author at the Center for Coastal Management and Policy at the Virginia Institute of Marine Science at the address below. Comments from agencies or individuals who have developed GIS data and have a desire to participate in a data exchange program are especially welcome.

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Black Skimmer *continued from page 3*

own colony against predators. Nesting on barrier islands removes some of the predation threat, although foxes, raccoons, and gulls exist on many of Virginia's barrier islands. An additional threat to beach nesting birds such as black skimmers is their well-camouflaged nests, which are quite

susceptible to trampling by recreational users of the beach such as dogs and humans. Control of access to barrier islands or at least to nesting colony areas may help alleviate some of this type of destruction.



Varied & Versatile Wetlands

Grazing and Haying Activities in Wetlands

Pam Mason

Worldwide, one of the more common uses of wetlands, both historic and present day, is as a food source for livestock. Wetlands are used for both grazing livestock and as a source of vegetation which is harvested for fodder. The higher elevations of salt and brackish marshes are most commonly used in this practice. Harvesting, or haying, salt marsh vegetation and grazing livestock was historically practiced along the Atlantic and Gulf Coasts of North America, the British Isles, Germany, Holland, Sweden and France. People in many of these areas still utilize wetlands vegetation for livestock feed, and more recently as bedding and mulch for gardening.

The importance of the harvest of salt meadows on Long Island is reflected in historical accounts which describe the process. Salt meadows were considered the property of the locality and mowing rights were auctioned off in early spring (Nixon, 1982). Various methods were used to collect the material. In the Long Island area, the hay was often placed in gundalows (low, flat-bottomed boats) and floated out at high tide. Another method involved harvesting during neap tides, in mid-summer. At mid-summer, the vegetation is not at peak height and is easier to handle and harvest. In New England, high marsh hay was placed on staddles, similar to pilings. In this way the hay was protected from getting wet and rotting, or actually being washed away by high tides. The hay was left on the staddles to be retrieved in winter when the frozen ground allowed the use of an oxen team to retrieve the hay (Teal and Teal, 1969). *Spartina patens* was most com-

monly harvested, but *Spartina alterniflora* and *Juncus gerardi* were also harvested.

Grazing livestock in salt marshes has obvious risks. The livestock can literally get stuck in the mud. However, grazing in the drier, high marsh area is not so risky. Ranwell (1972) estimates the saltmeadows of the Gulf and Atlantic coasts can support a cow every 2-4 acres, and the salt marshes of Northern France can support 2-3 sheep every acre. Like the rest of the Atlantic coast, grazing livestock in salt marshes was also popular in Virginia. In Mathews County, livestock was grazed in many areas, including Bethel Beach and Haven Beach. As property ownership extends down to mean low water in Virginia, individual families owned the marshes they used for grazing areas. It was most common to graze milk cows, and due to the clement weather, grazing took place year round (J.C. Diggs, Sr., 1995).

Grazing and haying activity can adversely impact wetlands. Foraging

cattle may compact the marsh substrate and denude areas of vegetation. This may lead to localized erosion problems and a reduction in vegetative productivity due to soil compaction (Chapman, 1960).

References:

- Chapman, V. J. 1960. *Salt marshes and salt deserts of the world*. Interscience Publishers, Inc. New York, N.Y.
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- Nixon, S.W. 1982. The ecology of New England high salt marshes: a community profiles. FWS/OBS - 81/55. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, D.C. 70pp.
- Ranwell, D.S. 1972. *Ecology of salt marshes and sand dunes*. Chapman and Hall, London.
- Teal, J. and M. Teal. 1969. *Life and death of the salt marsh*. Ballantine Books, New York, N.Y.

Alewife
continued from page 3

Adults return to shelf water after spawning. Most have left the Bay by summer and are believed to remain near their natal estuary.

Rapid growth occurs after hatching. The young remain in freshwater during their first summer and migrate to saltier water in late fall, followed soon by movement out of the Bay. Some alewives remain in the deeper waters of the Bay mouth until about 2 years old, but most migrate out into the nearshore shelf waters and move along the coast in large schools until maturity is reached at 3-5 years old.

Alewifes are planktivores, primarily feeding on small free-swimming crustaceans such as copepods. They have also been documented to prey upon small fish. Although not directly dependent on tidal wetlands or seagrass meadows, this species is an important prey item to species which use these areas as spawning and nursery grounds.

It's *Wetlands Management Symposium* Time

February 10th is not far off so you need to be making up your mind as to whether or not you are going to attend the **15th Annual Virginia Wetlands Management Symposium** this year at Hampton University. If you haven't seen an announcement yet, you will want to take a look at the agenda which is reprinted to the right. You will note that the \$15.00 registration fee includes lunch and 2 breaks. The format this year has been structured to allow for more questions and discussion by all symposia attendees, so come prepared to ask those tough questions and contribute during the discussion phases of the presentations.

The agenda contains something for everyone. Ann Jennings of the U.S.

Fish and Wildlife Service will update attendees on the political struggle going on with federal wetlands regulation and **reauthorization of the Clean Water Act**. In the wetlands mitigation arena, Harold Jones of the Corps of Engineers will talk about the **newly implemented, Wetlands Restoration Trust Agreement**. Also of great interest should be the insights of George Janek of the City of Norfolk, on **violation investigation and documentation** and Vanessa Valdejuli, Virginia Beach City Attorney, on **civil charges**.

If you have any questions, you can call the Marine Resources Commission in Newport News at (804) 247-2200.

Wondering about Wetlands

William Roberts

Q Should I fertilize my tidal marsh?

A In many situations, marshes have been shown to be successful at reducing shoreline erosion because the stems of the marsh grass act as baffles creating a physical impediment to the incoming waves. By slowing wave currents and dampening wave energy healthy marshes at least 15 feet in width are valuable in reducing shoreline erosion.

It has been assumed that marshes with higher wave dampening ability or those with higher stem density are more effective in reducing shoreline erosion. Additionally, it has been shown through marsh nutrient studies that in the case of newly created marshes subsurface fertilization results in greater stem production and better long term survival.

In recent years, various governmental agencies have recommended subsurface application of fertilizer when constructing marshes and surface or broadcast application after establishment. The purpose is to increase marsh plant growth and vigor. Some have questioned whether this is an effective measure and its potential effect on the already nutrient-laden Chesapeake Bay waters.

A report written in 1993 by the Virginia Institute of Marine Science, Center for Coastal Management and Policy entitled "Effects of Nutrient Enrichment on Natural and Transplanted Salt Marshes in Virginia," discussed the use of fertilizers for salt marsh growth enhancement. While the report is too detailed to present in this column, a summary of the findings is presented below. It is suggested that the

interested reader request a copy of the complete report from the Center for Coastal Management and Policy at VIMS.

The study concluded that marsh fertilization should be reserved for subsurface application in the establishment of new marshes. Surface application of fertilizer may in some cases be ineffective in that tidal action may remove the nutrients before they are taken up by the plants. This in turn may contribute to the already high levels of nutrients in Chesapeake Bay waters, exacerbating existing water quality problems.

So the answer to your question is that the use of fertilizer on wetlands should be reserved for wetland creation and restoration projects. Additionally, it is recommended that all fertilizer be applied in a subsurface manner and be of the slow-release type.

15th Annual Virginia Wetlands Management Symposium

Saturday, February 10, 1996

Sponsors:	Virginia Marine Resources Commission and Hampton University Center for Marine and Coastal Environmental Studies
Purpose:	To provide a forum for discussion of issues important to local Wetlands Boards
Time and Place:	9:00 a.m. - 4:00 p.m. at Turner Hall Auditorium at Hampton University (Lunch will be served on campus)
Format:	Presentations with audience participation
Registration Fee:	\$15.00 (non-refundable - includes break refreshments and lunch)

Agenda

9:00 - 9:30	Registration (coffee and doughnuts provided)
9:30 - 9:45	Welcome and Opening Remarks - Dr. Robert D. Bonner, Dean of the School of Pure and Applied Sciences, Hampton University and Commissioner William A. Pruitt, Virginia Marine Resources Commission
9:45 - 10:15	Overview of Environmental Programs at Hampton University - Dr. Robert Jordan
10:15 - 10:45	Clean Water Act Reauthorization: Federal Wetlands Regulation - Ann Jennings, U.S. Fish and Wildlife Service
10:45-11:00	Break
11:00 - 11:30	Regional Shoreline Element of Comprehensive Plans - Jeryl Rose, Hampton Roads Planning District Commission
11:30 - 1:00	Lunch
1:00 - 1:30	Bulkheads and Riprap Revetments: Engineering and Design - Lee Hill, Department of Conservation and Recreation

Workshops

Moderator: Karla Schillinger, City of Norfolk

Mitigation Issues

1:30 - 1:45	State Policy and Perspective - Thomas Barnard, Jr., Virginia Institute of Marine Science
1:45 - 2:00	Federal Policy and Perspective - Harold Jones, Norfolk District, U.S. Army Corps of Engineers
2:00 - 2:30	Audience Participation: Questions and Discussion
2:30 - 2:45	Break

Violation Resolution

2:45 - 3:00	Investigation Procedures and Documentation - George Janek, City of Norfolk
3:00 - 3:15	Board Procedures and Civil Charges - Vanessa Valldejuli, City of Virginia Beach
3:15 - 3:45	Audience Participation: Questions and Discussion
3:45 - 4:00	Summary Remarks and Adjournment - Robert Grabb, Virginia Marine Resources Commission

Calendar of Upcoming Events

- Feb. 28 - 29, 1996** **VIMS Winter Botany Course** (2 days). Open registration. \$100.00. Contact: Bill Roberts at 804-642-7395.
- May 16-17, 1996** **23rd Annual Conference on Ecosystems Restoration & Creation.** Hillsborough Community College, Institute of Florida Studies. Contact: F. J. Webb, Dean of Environmental Programs, Hillsborough Community College, 1206 North Park Road, Plant City, FL 33566. 813-757-2104.
- June 9-14, 1996** **17th Annual Meeting of Society of Wetland Scientists.** Kansas City, Missouri, Allis Plaza Marriot. Contact: Society of Wetlands Scientists, PO Box 1897, Lawrence, Kansas 66044.
- June 21, 1996** **VIMS Tidal Wetlands Seminar** (1 day). Open registration. \$15.00. York River State Park. Contact: Bill Roberts at 804-642-7395.
- July 16-18, 1996** **VIMS Wetland Plant Identification Class** (3 days). Open registration. \$150.00. Contact: Bill Roberts at 804-642-7395.
- September 1-6, 1996** **25th International Conference on Coastal Engineering.** Peabody Hotel, Orlando, Florida. Call 512-994-2376 for more information.



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